A Look At Specific Vulnerabilities

MANPADS –

- **Many Need 15 Degree Super-Elevation**
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CREW-SERVED WEAPONS –

New radars provide 15 miles warning

- **Depends On Early Warning**
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SELF-PROPELLED SYSTEM WITH ON-BOARD ACQUISITION

- **Thin-Skinned**
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4 k gun 10 k missile for 2S6

What of Pantzyr-1 2S6 Skyshield

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ANTI-HELICOPTER MINES – UNDER REVIEW

- **Limited Range: 100 Foot Altitude, 50 Foot Radius**
- **Acoustic Sensor: Can Detect Within 200 Meters**

More Capable Already out..

How Aviation Fights in the Objective Force…

Aviation Warfighting Focus…

Combined Arms Synergy in the Warfight

Operational and Tactical Maneuver
- **Adds Third Dimension and High Tempo**
- **Precision Fires, Precision Maneuver**

Reconnaissance and Security
- **Maximize Manned and Unmanned teams of Commanche and UAV**
- **Integrated C4ISR, Continuous SU/SA**

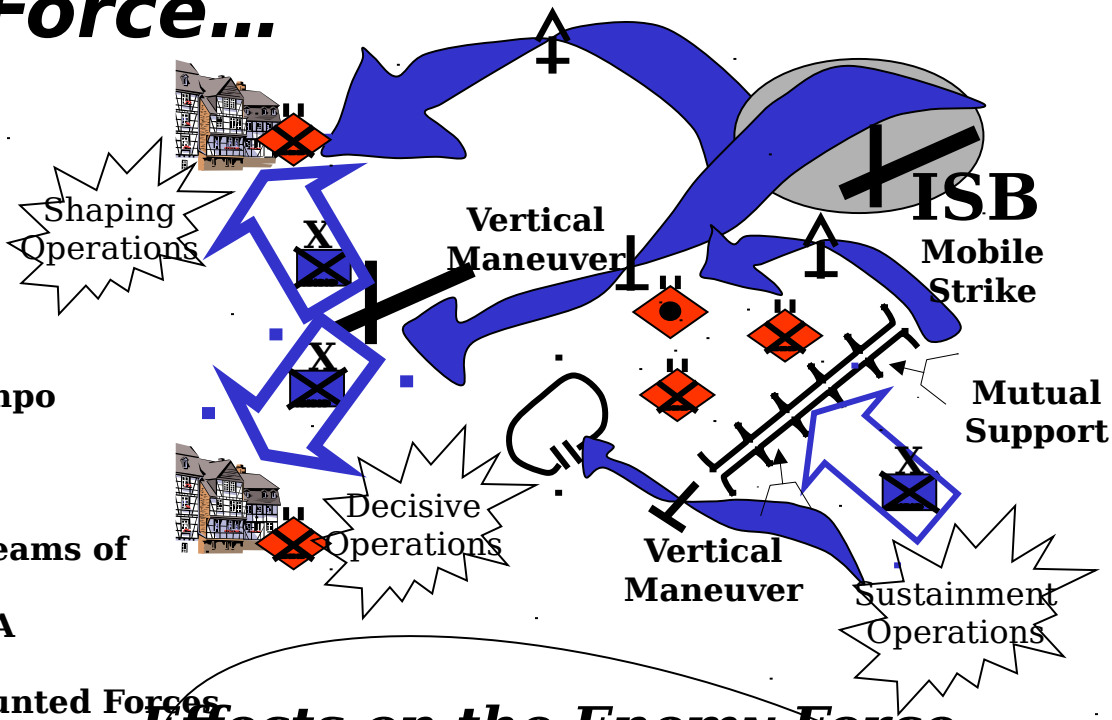
Vertical Maneuver with Mounted or Dismounted Forces
- **Using FTR and Organic Lift Assets**
- **Negate Effects of Terrain, Gain Positional Advantage**

Mobile Strike
- **Deliver Precision Fires with Standoff**
- **Armed UAV, Manned/Unmanned Teaming**
- **Provide Improved Situational Awareness**

Mutual Support in Decisive Operations
- **Close Fires in Red Zone Fight**
- **Increased Agility with Netted ISR**

Sustained, Simultaneous and Sequential OPS in Non-linear Environment

Provide Enhanced C2 for Ground and Aviation Forces



Effects on the Enemy Force

- ***Denied Freedom of Maneuver***
- ***Isolate Enemy Force***
- ***Must Fight in Multiple Dire***
- ***Disrupt C2 and Logistic***

There is no FLOT. The threat has set the stage for US arrival. The
Fight in a multi-direction method, move when the conditions are
He expects isolation in certain areas and has prepared for it. Dis
will be virtually impossible

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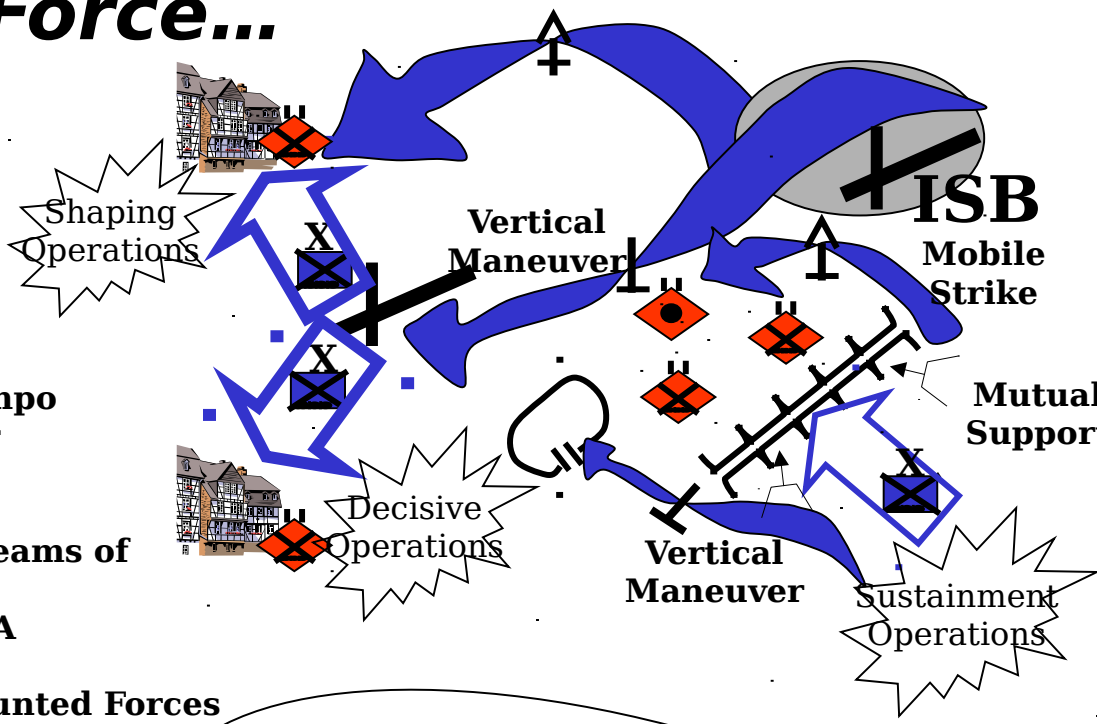

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He wants to do these

This slide doesn't address the New Operational Environment or emerging enemy capa

Neutralizing IADS

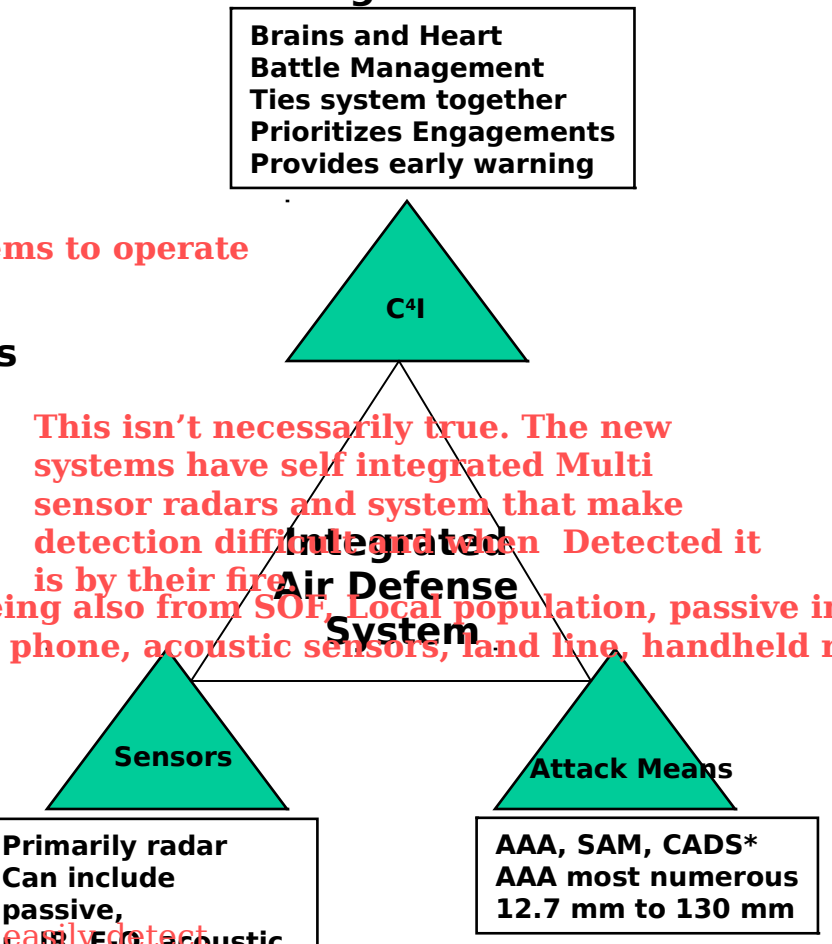
- Identify and locate C⁴I nodes. (UAVs, feints, recon, national assets)
- Destroy nodes using all available combined arms assets.
- Use joint service assets beyond combined arms capability.
- IADS effectiveness is maximized using centralized control. Destruction of C⁴I nodes hastens advent of decentralized control (autonomous operation).
- This will force radar equipped AD weapons to utilize on-board radar thereby betraying their location. This will allow engagement or avoidance.
- Eliminates cueing to optically control weapons, ie MANPADS, AAA, crew-served weapons, etc.
- Best solution is to destroy an IADS. C4ISR Node effectiveness remains a well planned nap-of-the-earth mission based on sound, valid intelligence.
- Can Reduce Effectiveness with Well Planned Mission, Based on Sound, Valid Intelligence

Threat trains and is acquiring systems to operate In a stand alone mode.

NOE is not a solution. Threat is designing systems and radars to easily detect NOE. This is his battlefield. You will not move without eyes on you.

SYSTEM

Communications/data dependant
Built-in redundancy
Protected against destruction



This isn't necessarily true. The new systems have self integrated Multi sensor radars and system that make detection difficult and often Detected it is by their fire

Cueing also from SOF, Local population, passive in cell phone, acoustic sensors, land line, handheld ra

* CADS=Combined Air Defense Sys

A REAL WORLD IADS WILL NOT DEGRADE GRACEFULLY

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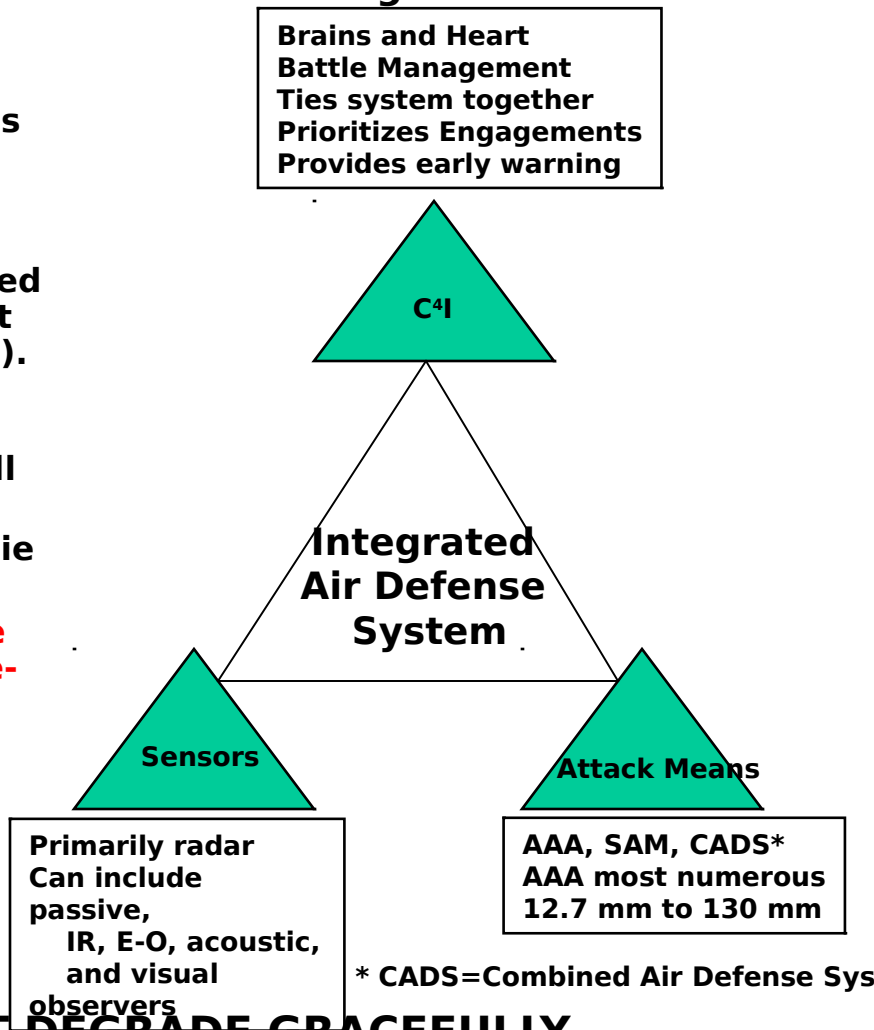

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THREAT ASSESSMENT

BOTTOM LINE: **Not Just an Issue for Army Aviatio**
Combined/Joint Force Issue

- **Restricts Freedom of Maneuver in Single Dimensional Operations**
- **New, High Technology Threats Will Not be Dominant**
- **Variety of Old and New Technol**
  Maximizing Cover, Camouflage
  Deception Most Likely, Redund
  Limited In Those Countries
- **Training and Maintenance is a**

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Aviation Implications

Aviation Operational Environment Highlights:

- **A wider spectrum of operations, increased threat technological capability and unpredictability leading to a more complex and challenging range of operating environments . .**
- **In association with an Adaptive and Adoptive Threat**
- **A Challenge for Independent Maneuver**
- **Combined Arms operations essential**
- **Extremely lethal, offensively oriented air defense environment**
- **Degradation of U.S. technological superiority**
- **Changed target sets**
- **Challenges US preferred method of Warfare….**
- **Standoff, Precision Attack**

Emerging Military Capabilities

Urban/Complex Terrain

Asymmetric Threats

Emerging Military Strategies

Objective Force Facts and Assumptions

Facts:

- **Aviation Will Transition As An Integral Part of Army Transformation**
- **S & T Programs Will Continue to Leverage Technology to Develop the UAV and the Future Transport Rotorcraft**
- **Current Organizational and Manning Deficiencies in the Total Force Must Be Fixed**
- **Recapitalization Program is Essential for Reliability Improvements**
- **Leader/Soldier Development Programs are Key to Future**

Assumptions:

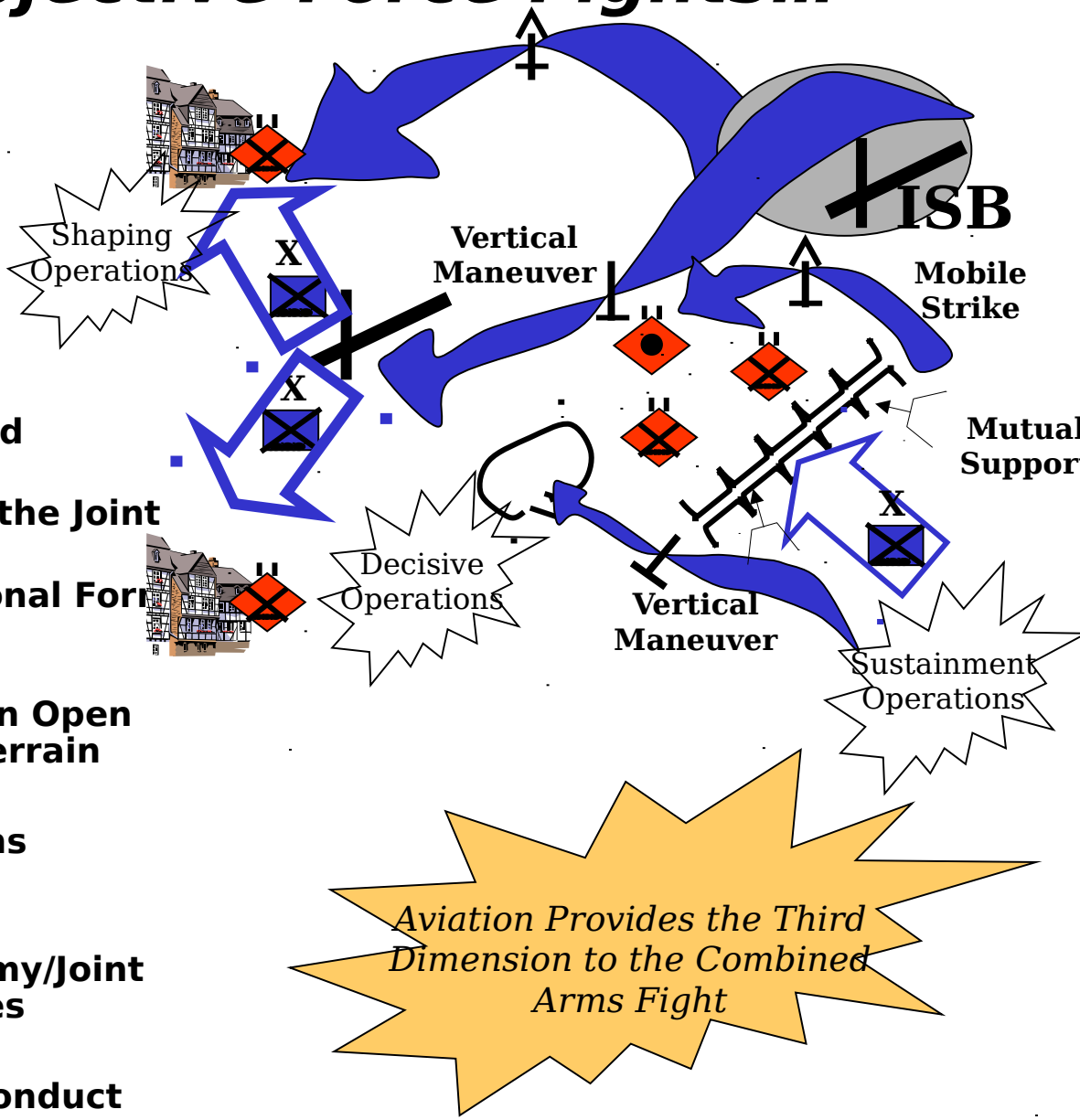
- **Future Threat Environments Will Mature As Forecast**
- **Doctrinal Development Will Meet Transition Timelines**
- **Training and Logistics Systems Will Be Re-engineered to Support Transition**
- **Increased Resources Will Be Available to Move to the Objective Force**
- **Reorganization and Manning the Force Must Be Achieved within BFA**
- **AH-64D Longbow Apache Selective Upgrade Will End in FY 06**

How the Objective Force Fights…

The Army Objective Force O&O Tells Us…

WARFIGHTING FOCUS

- **Operational Movement and Maneuver**
  - **Extends the Reach of the Joint Force Commander**
- **Tactical Maneuver/traditional Forms of Maneuver**
  - **Will greatly Expand Engagement Ranges in Open and Urban/Complex Terrain**
- **Vertical Envelopment**
  - **Unique Combined Arms Operation**
- **Mobile Strike**
  - **Exploits Advanced Army/Joint Aviation and Joint Fires**
- **Close Combat**
  - **Where Army Forces Conduct Decisive Combat Action**



Executing the Mission in the Future Environment

- **Army Aviation is not a stand-alone force, but a member of the Combined Arms Team.**
- **Situational awareness is essential to combat effectiveness and survivability.**
- **We will use all means available (national, strategic, tactical) to plan missions.**
- **SEAD (Need precision SEAD vs traditional SEAD) is always a mission planning consideration, using organic or joint assets against priority threats.**
- **Enhanced aircraft survivability technology will increase combat effectiveness and staying power.**
- **Improved survivability is designed against the current and future threats. He will also be improving. Not a static process**
- **Know Your Enemy – Training and Leader Development remain essential to mission success.**

Meeting the Challenge (Offense)

Detection

Target and ID

Utilize Joint/Combined Arms
- Lethal and Non-Lethal
- SEAD Against C2 Nodes

Maximize the Use of Night and Low Visibility Conditions

Use Deception/Feint to Cause Early Exposure

Exploit UAV Capabilities - Manned and Unmanned Teaming

Know the Enemy - Full SU/SA

Leverage Technology for LO, Acoustics, Precision Fires

Engagement

Leverage Combined Arms Precision Maneuver and Precision Fires

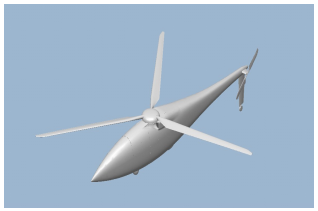
Engage w/Lethal UAV, Standoff Precision Fires

(Enemy will try and negate this)

Deny Weapons Capabilities w/Speed, Maneuver and TTP

Attack w/Multiple Capabilities

Simultaneous Ground and Air Operations For Multiple Dimension Overmatch



Survivability

Training and Leader Development

Redundant Capabilities

Mass only in Permissive Environment

Maintain Dominance in Combined Ar Capabilities